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ABSTRACT

This annotated bibliography presents annotations of 31 books and journal articles dealing with systems theory and its relation to organizational communication, marketing, information theory, and cybernetics. Materials were published between 1963 and 1992 and are listed alphabetically by author. (RS)

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Annotated Bibliography: Systems Theory and Communication

William G. Covington, Jr.

December 1993

Andersen, U. S. (1966). Success-cybernetics. West Nyack, NY: Parker publishing. There are some problems with this book. The author takes one aspect of systems theory, cybernetics, and applies it to human relations. The problem is that the citations are partial and not given in their entirity. For example, he will tell his readers, "researchers at the University of Chicago found", but then will not tell anything else about who the researchers were or the scope conditions under which the study was conducted. This book is largely for a popular audience, but it does take a principle of system theory and relates it to a popular audience.

Bertalanffy, L. V. (1968). General system theory. New York: George Braziller.
This seminal work on general system theory explains the rationale for to theory and the philosophical groundwork behind its development. Bertalanffy, one of the earliest system theorist, shows how his work with the existing framework of segmentation in biology was inadequate and thus systems theory evolved. His influences came from many different sources in numerous fields of study from various cultures. The present volume is a good introduction to the history of this theorical approach.

Bertalanffy, L. V. (1972). The history and status of general systems theory. Academy of management journal, 15, 407-426.
This article is a reprint from an article in George J. Klir, ed., Trends in general systems theory (New York: Wiley-Interscience, 1972).
This is the lead article in an issue dedicated to systems theory. In this piece, the father of systems theory provides readers with a chronological chain of thought that led to the theory's development. Sources as early as Aristotle are credited with thinking in terms of systems. The Christian writer Dionysius and Nicholas of Cusa are other early systems theorist cited although the terms used reflected those of the times in which they lived and not those of current systems writers. When Bertalanffy posited observing an organism holistically rather than incrementally in his writings in the 1920s, it created a paradigm shift he asserts. This is because even though problems were viewed in a systems framework by the ancients, for centuries this had remained "philosophical" and had not become a "science" he argues. By the 1930s Bertalanffy proposed a new discipline, that of general system theory. Being a biologist, his focus was upon open systems, i.e. those systems which interact regularly with their environments. He points out that it was intentionally that he introduced

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"general system theory" in a catholic sense. This article is especially useful for a foundation to system theory. The author is successful in describing the antecedents to the theory's development and the current (at the time of its release) applications.

Campbell, J. (1982). Grammatical man: Information, entropy, language, and life. New York: Touchstone.
This is a very readable book which combines the human element with scientific explanations. Written like a historical novel in places, this book traces the development of information theory from its earliest days to its wide applications. The section on the contrasts between Norbert Werner and Claude Shannon reads like a good human interest plot. Contrast this narrative with the discussion on information being a form of DNA focus, which gets quite complex in places, and it is easy to see that Campbell is a diversified source of information himself. He takes Freud to task for presenting the brain as a passive receptor of information, using the fallacy of the bullet theory as the basis of his argument that the brain is active in how information it receives is acted upon. Several prominent scholars were interviewed for this book and are identified in the endnote section. He is quite thorough in documentation. This is one of the best eclectic, yet substantive books one could hope to find on a topic of this nature.

Churchman, C. W. (1968). The systems approach. New York: Delta.
In the first half of the book the author explains what systems theory is and how it is functional. In the second half of the book he addresses the topic as it applies to humans and possible future applications for those using a systems paradigm. His writing style is easy to read and the logic he uses makes it an enjoyable investment of time to pick up this book. Some of the content is a little dated, but overall the central premise still applies.

Cook, R. L. & Jenicke, L. O. (1989). Expert systems technology applied to marketing decision making: An interdisciplinary term project. Journal of marketing education. 45-52.
Expert systems are defined as artificially intelligent computer software programs that mimick a human expect's logic in problem solving to provide expert solutions to problems. For managers in marketing capacities, expert systems offer promise for the future. A model is presented which shows the interaction between the expert system's knowledge base and the inference engine used to arrive at the solution. A term project was designed around the expert system technology discussed in the article. Positive outcomes were reported as each team was able to complete the project successfully.

Dechert, C. R. (ed.) 1966). The social impact of cybernetics. New York: Clarion.
Numerous contributors to this reader approach an aspect of systems theory from many different scholarly perspectives. One of the most well-known of the contributors is Jimmy Carter's mentor, Hyman Rickover, father of the nuclear navy. His chapter deals with an area of my interest, humanistic technology. Each of the papers in this volume were originallym presented at a symposium in 1964 the author states in the preface. He goes on to explain that the world in which we live is much different from the one in which we were born, cybernetics, which grew out of systems theory, is a tool for making sense of that world. Concerns in both the public and private sectors overlap, thus one system is part of another. Systemic thinking analyzes such interactions.

Ericson, R. F. (1972). Visions of cybernetic organizations. Academy of management journal, 15, 427-443.
Careful distinctions are made between cybernetics and systems theory. Although other writers have used to the synonymously, Ericson emphasizes that systems theory is a broader concept. A substantial portion of the article is devoted to the discussion of humans being threatened by machines in a systemic approach to organizations. "Cyborgs" (cybernetic organisms) are becoming more commonplace. The latter half of the article is concerned with adapting models developed by systems theorists and addressing issues related to cybernetic organizations. A model developed by James G. Miller is used to demonstrate that if academic disciplines would concentrate less on specialized jargon, enhanced cross-disciplinary communication would result. Two areas that particularly need integration, he argues are management science and behavioral science. A second model is presented by Ericson involving human freedom and cybernetic organizations. The argument is made that management will be less rigid in the future, that management concerns will be focues instead on the design of viable systems using concepts from cybernetics and systems theory.

Farrell, R. A. & Case, C. (1992). The micro system of deviance in intimate relationships. Sociological inquiry, 62, 464-479.
Rather than using the individual as the locus of control in the area of deviance, these writers use a micro system as their focal point. Building on the work of Talcot Parsons, they view the dyad as being responsible for maladaptive parent-child relationships. The types of maladaptive dyads identified are: aggression-submission, evasion-enforcement, incorrigibility-observance, and dominance-independence. The authors conclude that learning theory applies to such a dyad, that as the child learns the roles parents play in their interactions with each other, the child learns what is acceptable behavior.

Gallagher, J. P. (1988). Knowledge systems for business. Englewood Cliffs, NJ: Prentice Hall.
Artifical intellence is the system focused on in this book. The author uses a systems approach in addressing the issue of how such knowledge systems should be managed. Readers with well-developed computer literacy would benefit from this book moreso than readers that do not work in such areas. Some of the terminology doesn't make much sense to people who are not computer programmers. In terms of systems theory, the book is a practical application of theory to a specific area.

Gessford, J. E. (1980). Modern information systems. Reading, MA: Addison-Wesley.
This book is similar to the Gallagher book in that it deals with information systems generated via artifical intelligence. Unlike Gallagher's book, this one is a little easier to follow. The intended audience is persons concerned with managing information organizations. Most of the information presented is rather technical. Concepts and principles from systems theory are appropriately applied. Basically it shows how isomorphic the principles of the theory are.

Gore, M. and Stubbe, J. (1983). Elements of systems analysis (3rd ed.). Dubuque, IA: William C. Brown.
The intended audience for this book is primarily system analysts. In the beginning of the book the basics are presented as the authors define terms and give an overview of topics to be developed in subsequent chapters.
The corporate setting is the context for this book. Coordinating various subsystems toward a desired outcome is the central premise. Charts and graphs are used to illustrate various points made by the authors. Generally this is a good introductory look at systems theory as applied to a corporate setting.

Hage, J. & Aiken, M. (1970). Social change in complex organizations. New York: Random house.
An organization's complexity can be viewed from two different points. First, there is the number of specialities found within the organization. Second, the degree of specialization found among people in the organization is a factor in complexity. The more an orgnaization places an emphasis upon the acquisition of knowledge, the more that organization will have to be concerned with change. Numerous system theorists note that information is change. The transition Harvard University made in the last century is used as an illustration of a complex organization going through a period of redefinition. The era in which James Eliot served as president was the one wherein Harvard evolved to its present structure. Hage and Aiken use similar case studies for illustration.

Kast, F. & Rosenzweig (1972). General systems theory: Applications for organization and management. Academy of management journal, 15.
This is one of the basic articles that became a landmark in the systems theory literature as it relates to management. The authors cover the essentials of the theory and show how it applies specifically to managing organizations. Terminology that is at the core of the theory is explained and expanded upon. This article is one of an entire issue devoted to systems theory. The whole issue is dedicated to Ludwig von Bertalanffy, the father of systems theory.

Katz, D. and Kahn, R. L. (1966). The social psychology of organizations. New York: John Wiley.
This book grew out of the work of Rensis Likert who first approched the study of social systems in an organization in the 1940s. The book is purely qualitative in its analysis. The authors follow through on basic system theory tenets, explaining how they apply in context. In so doing, they sell their readers on the application the theory has for other settings. In that way a heuristic function is served. Well-written, this book is a worthy contribution to the systems theory literature.

King, W. R. (1969). Systems analysis at the public-private marketing frontier. Journal of marketing, 33, 84-89.
Context is important in this author's view, in that both government and private enterprise are sometimes involved in mutual projects designed to accomplish the dual goals of profit and public service. Systems theory with its concepts are proposed as appropriate tools of analysis for inquiry into these joint ventures.
The author points out that systems analysis is not merely the development of mathematical solutions to abstract models, nor the automation of decision making via computers. Rather, the approach is designed to focus on the interactions and interdependencies of complex systems. In using such an approach, results are sometimes determined based on which system is used for the unit of analysis.

Krippendorff, K. (1986). Information theory: Sturctural models for qualitative data. Beverly Hills, CA: Sage.
Krippendorff's book has a misleading title as it is quite complex and very much quantitatively oriented. He takes an offshoot of systems theory, information theory and develops his presentation accordingly. Comparisons are made between this approach and other ways of conducting research. The book is recommended to system theorist in the preface,but as an introduction and explanation, Krippendorff's attempt misses the point by having too many models, too much jargon, and unneccesary complexity in comparison with other books on the topic.

Laszlo, E. (1972). Introduction to systems philosophy. New York: Gordon and Breach.
This is another one of the classics in terms of systems theory. The book is an excellent read as one can tell the author is a renaissance man just by his writing sytle and the extensive and broad refereneces in his work. Relying heavily upon biology and mathematics, Laszlo builds a strong case for a systems approach to observation and analysis. In the case of an open system interacting with elements in its environment, Laszlo explains that the equilibrium reached after such an encounter means growth has taken place. Learning is an example of such growth. A person is an open system and once something has been learned the person is never again the same. Open systems must interact with their environment to survive. For anyone interested in systems theory this book is essential.

Leibman, N. C. (1987). Mini-series/maxi-messages: Ideology and the interaction between Peter the great, aetna, at & t and Ford. Journal of film and video, 39.
A systems approach is used by Leibman in analyzing the ideology portrayed by television via the mini-series. "Peter the Great" is used as a case study for the argument. Although Leibman does not directly use systems theory terminology, she clearly uses a systemic approach to the research question. In keeping with the holistic overview of systems thinking, commercials are included in this analysis. Leibman's premise is that the dominant ideology is promulgated via this medium in spite of the exotic location and historical context of the topic.

Lewis, R. J. and Erickson, L. G. (1969). Marketing functions and marketing systems: A synthesis. Journal of marketing, 33, 10-14.
Two frameworks are compared for viewing an organization's marketing activies; the functional approach and general systems theory. The two approaches provide a synthesis for analyzing organizations it is asserted. It is the authors' opinion that the two frameworks combine to provide merit when used together. A model is presented which sythesizes the functional view and the systems view of an organization's marketing activities. Terminology of the two approaches is used in explaining the proposal model.

Maruyama, M. (1963). The second cybernetics: Deviation-amplifying mutual causal processes. American scientist, 51, 164-179.
Two different types of cybernetics are introduced by the author. The first cybernetics is referred to as the studies of the deviation-counteracting type of relationship that has been dominant among writers and theorists. The second cybernetics receives less attention, this being the deviation-counteracting mutual causal process. Although the concept of the second cybernetics has not received as much

print as the first cybernetics, it has not gone completely unnoticed Maruyama observes. This article is largely based in biology. A model is presented and discussed concerning the growth of cells and the rules governing such growth in an organism.

Monge, P. R. (1982). Systems theory and research in the study of organizational communication: The correspondence problem. Human communication research, 8, 245-261.
Monge takes two concepts of systems theory, holism and feedback, and analyzes whether traditional approaches are capable of providing evidence for or against systems hypotheses. Monge recommends using structural equation modeling (SEM) as an appropriate means for testing claims of systems analyists. He mentions that no technique can be all inclusive, but the tool should fit the study. Monge concludes that more people have called for a systems approach than have actually applied the approach. He encourages researchers to actually use the method.

Parker, B. (1991). Beyond the vote: Responses to centralization among Nepals' marpha thakali. Human organization, 50, 349-357.
Using systems theory, Parker looks at the advantages and disadvantages of centralization in a given location. Generally, she found that when centralization takes place, the local communities become more dependent on the centralized power center and loses some of its local identity. One group, the Marpha Thakali in Nepal, is attempting to gain more control over its own destiny in the midst of a trend toward centralization. The plan, she contends, is one of an adaptive indigenous political-administrative system.

Perry, N. S., Jr. (1972). General systems theory: An inquiry into its social philsophy. Academy of management journal, 15 495-510.
The writer shows that the basic tenets of general systems theory are also commonly held by advocates of functionalism. He also argues that because of underlying theoretical assumptions, leaders operating from a systems perspective seek order as an end result. GST is presented as a guiding metaphor for sociological inquiry. He argues that an implict philosophy is toward system maintenance rather than change in such a metaphor. Although functionalism and GST evolved from divergent lines of thought, both have similar conservative assumptions Perry contends. Like other writers, Perry distinquishes between systems theory and cybernetics, saying the latter is primarily concerned with information systems while the former is more inclusive in scope. The concepts of consensus and growth are presented as evidence that GST is a conservative framework for analysis.

Phillips, D. C. (1972). The methodological basis of systems theory. Academy of management journal, 15 469-477.
Rather than being a paradigm shift, Phillips argues that writers earlier than Bertanlaffy had the same concepts in mind in discussing the relationship between the knower and the known, which he contends is at the heart of systems theory. In negating the idea of a paradigm shift, Phillips writes that systems theory builds upon so-called mechanistic perspectives rather than departs from them. Hegel wrote of a holistic approach to observation. Prior to Bertanlaffy's realization of a systems perspective in the 1930s, Dewey, Bentley, and William James were writing of some the systems concepts yet to be codified into theory.

Stasch, S. F. (1969). Systems analysis for controlling and improving marketing performance. Journal of marketing, 33, 12-19.
At the time the article was written marketing executives and researchers had been lagging behind other areas in incorporating computers and quantitative research techniques into their processes. The author advocates the systems approach as a means of causing those in the discipline of marketing to see the benefits for adding these two elements to their endeavors. Marketing theory is used by the author to guide the firm's efforts in establishing performance criteria, organizing an information collection activity, and developing analytic models. Marketing is viewed as a subsystem of an enterprise's larger activies.

Stidsen, B. & Schutte, T. F. (1972). Marketing as a communication system: The marketing concept revisited. Journal of marketing, 36, 22-27.
A systems approach is taken, along with concepts from the systems literature to enhance communication between marketers and consumerists. The author points out that misunderstanding between the two groups has resulted in severe criticism. It is pointed out that the spirit of a **dialogue** between producers and consumers is the ultimate purpose of marketers. Systems concepts such as boundaries, outcomes, and specialization help reach this point of dialogue.

Swanson, E. B. (1988). Information system implementation. Homewood, IL: Irwin.
From the outset the author makes known his intention is this book is to bridge the gap between design and implementation. In such a scenario, the designer of the system must communicate actively with the client to achieve optimal results. Three types of information systems are discussed; the mechanistic approach, the utilitarian approach, and the reflective approach. The most common approach is the mechanistic approach. Swanson cautions that maintenance is a continuing problem once systems are operating. Evaluation is vital to any system, information systems included.

Included is an analysis of the activities of the system, an analysis of possibilities of the system, and a utility analysis.

Thayer, F. (1972). General system (s) theory: The promise that could not be kept. Academy of management journal, 15, 481-493.
Presented as an attack on systems theory and an apologia of the mechanistic framework, this article is rather superficial in its attacks. The author contends that systems theorists are unable to see that their thinking is deterministic and leads back to a mechanistic model due to their **a priori** assumptions. For example, he writes that in viewing the relationship between superior-subordinate from a systems perspective causes one to **impersonalize** relationships. This is an example of the weakness of his argument. Similar statements are made for the system concepts of hierarchy, concreteness, and growth.

Turow, J. (1992). Media systems in society. New York: Longman.
A combination of history and description of the evolving status of organizations is used by the author in this systemic view of the changing media industries. Turow uses a lot of documents from professional, trade, and academic sources in building his case. The central premise is that convergence is taking place among the various media producers. As a consequence, media managers are redefining what their organizations seek to do. An earlier work along similar lines was a book written by Lavine and Wackman a few years ago. Their work focuses more on management, while Turow puts more emphasis on the consumer. A systems approach, being holistic sufficiently accomodates both emphases quite well. Turow concludes his book by telling his readers that an awareness of how the media function is the first step in making a difference in the symbolic world inhabited by all.

Watson, G. (ed.). (1967). Change in school systems. Washington, D C.: NEA.
This reader features various contributors in the field of education, all using a systems perspective to discuss changes in education. Two audiences would be appropriate for this book, educators and system analyist. Although some of the issues are dated, the principles of systems theory are still applicable. Many of the sources cited are familiar names in systems writing. Generally this is a worthwhile, but dated contribution to the systems literature basically applied to a speciality area.

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